

## **REMARKS**

The Office Action dated June 14, 2006, has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claims 3, 4, 14 and 15 have been canceled and claims 1, 5-7, 12-13, 16-18 and 21 have been amended. No new matter is presented. Claims 1, 2 5-13 and 16-22 are pending and respectfully submitted for consideration.

### **Rejection under 35 U.S.C. § 101**

Claims 1-22 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. As noted above, claims 3, 4, 14 and 15 have been canceled. The Office Action took the position that:

"[w]hile claims 1-22 produce a useful and concrete result, the produces result is not clearly tangible. In other words, the result is not recited in such a manner that it has an effect in the real-world. For example, the result is never converted into any output that is clearly conveyed in the real-world nor is it used to effect any real-world actions.

The Applicants respectfully submit that the claimed invention produces a useful, concrete, and tangible result in accordance with MPEP § 2106(II)(A) and State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368, 1373 (Fed. Cir. 1998). Therefore, the Office Action's assertion on page 3, lines 6-17 that the claimed invention is not tangible as it does not set forth a practical application that generates a real-world result is misplaced.

What constitutes a "useful, concrete, and tangible result" has been resolved on a case-by-case basis. A "useful, concrete, and tangible result" has been held to encompass the result of a mathematical calculation applied to any concrete item, such

as dollars or orders. For example, a process that transforms data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a *practical application* of a mathematical algorithm, formula, or calculation, because it produces *'a useful, concrete and tangible result'*--a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades. See State Street Bank & Trust Co., 149 F.3d at 1373 (emphasis added).

In this case, as stated in the specification of the present application, being able to accurately forecast low-order-rate parts allows the manufacturing industry to resolve whether or not to discard the dies used to manufacture the parts and to perform inventory management to meet the demand from users, dealers and the like, for parts, particularly low-order-rate-parts. See page 1, lines 28 to page 2, line 10 of the specification.

The Applicants traverse the rejection and respectfully submit that the present invention produces a clearly tangible result that has a practical application, specifically, forecasting future numbers of orders of low-order rate parts.

Claims 1, 2, 5-13 and 16-22 are directed to a method and system for forecasting future parts orders in part inventory management, particularly a method and a system for forecasting future number of orders or demand of low-order-rate parts whose order rates have fallen below a predetermined level. Specifically, Claims 1, 2 and 5-11 produce a forecast of future number of orders of low-order-rate parts based on calculated occurrence rate probability distributions of number of orders during a predetermined period. Claims 12, 13 and 16-22 recite, among other features, a

forecasting means for forecasting future number of order of low-order-rate parts based on calculated occurrence rate probability distributions of number of orders during a predetermined period. Accordingly, Claims 1, 2, 5-13 and 16-22 do produce a tangible result, and, therefore, a practical application, contrary to the assertion by the Office Action.

For at least the above reasons, the Applicants respectfully submit that Claims 1, 2, 5-13 and 16-22 are directed to statutory subject matter as defined by 35 U.S.C. § 101, and request withdrawal of the rejection.

#### **Rejections Under 35 U.S.C. § 112**

Claims 2, 4, 6, 13, 15 and 17 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. As noted above, claim 4 has been canceled.

The Applicants respectfully submit that the “second predetermined level” refers to a greater amount of parts ordered over the amount of parts ordered in the “predetermined level”. Therefore, the second predetermined level is “higher” than the predetermined level, because more parts are ordered at the second predetermined level than at the predetermined level. See page 5, lines 21-25 of the Specification. The second time-course order record determining means determines a record of orders. Further calculations are made based on determining the record of orders. See page 5, lines 9-14 of the Specification as originally filed. The record of orders is used to determine whether the order rate has fallen below a second predetermined level. If so, second low-order-rate parts are extracted.

The Office Action also took the position that “the results of this determination step is never used again; therefore, it is not clear what the significance of this step is in

relation to the invention as a whole, especially the fact that the second low-order-rate parts have fallen below a second predetermined level higher than a [first] predetermined level." See page 4, lines 10-14 of the Office Action. The Applicants respectfully submit, however, that the results of the determination step are used to extract second low-order-rate parts, which are classified by the second order occurrence probability distribution means.

Claim 17 is dependent from claim 13 and was rejected for the same reason. Claims 2 and 6 were rejected for the same reason as claims 13 and 17. The Applicants note that the Examiner requested correction and/or clarification. As the Applicants have clarified the meaning of the second time-course order record determining means and the order rate having fallen below a second predetermined level higher than the first predetermined level, the Applicants respectfully submit that claims 2, 6, 13, and 17 are definite, and respectfully request withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

### **Rejections Under 35 U.S.C. § 103**

Claims 1-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McConnell et al. (U.S. Patent Publication No. 2001/0049690 A1, "McConnell") in view of Price ("How to Prepare Inventory Forecasts for Very Low Demand Items"). As noted above, claims 3, 4, 14 and 15 have been canceled. McConnell was cited for disclosing a system for forecasting future orders of parts for products sold to customers. The Office Action acknowledged that McConnell does not disclose Monte Carlo simulation means for carrying out Monte Carlo simulation based on the calculated order occurrence probability distributions to determine occurrence rate probability distributions

of numbers of orders during a predetermined period. Price was cited for curing this deficiency.

McConnell discloses an item velocity monitoring system capable of detecting when sales (or other movement activities) of an item are occurring too quickly, or too slowly. The item velocity monitoring system is first "trained" in a learning mode of operations, during which item patterns and group patterns are evaluated and placed into a pattern database. The system then compares the observed item velocity to its model probability velocity, and if the observed item velocity deviates beyond the statistical model, a "velocity event" is generated, declaring one of the above selling "too quick" or "too slow" conditions. Once a velocity event is detected, an event handling routine displays the event, and can transmit the event information over a network (including the INTERNET) to a remote computer for additional analysis or record keeping.

Price discloses that the stocking criteria for very low demand items is often arbitrary and results in either an excessive inventory or a reduction in service, depending on whether the quantity stocked turns out to be too large or too small. Monte Carlo simulation was used to compare two methods of forecasting for very low demand items. The two methods were: (1) simple exponential smoothing, and (2) the Bayesian approach. The simulation of the two forecasting methods assumed that the demands would occur randomly in a "Poisson distribution" pattern. While neither model worked "best" in all situations, simple exponential smoothing performs reasonably well. Bayesian forecasting methods may work better for this type of forecast in the future, but in their present form, they do not. See the text of Price.

As a preliminary matter, the Applicants respectfully submit that McConnell fails to disclose or suggest additional features of the invention beyond those acknowledged in the Office Action. Claim 1 recites determining from each such order at least one parameter indicating a characteristic of orders after the order rate fell below the predetermined level and that the parameter indicating the characteristic of orders is a ratio of number of orders. Claim 7 and 18 recite an order occurrence probability distribution as a function of a ratio of number of orders. The Office Action took the position that paragraphs 39, 40, 62, 68, 71, 74, 84, 112, 115 and 130 to 140 of McConnell disclose this feature of the invention. In contrast, McConnell merely discloses adjustments indexed by item and effect. See paragraph [0128] of McConnell. There is no disclosure or suggestion in McConnell of the characteristic of an order, as recited in claims 1 and 12.

With respect to claims 1, 7, 12 and 18, the Applicants respectfully submit that the combination of McConnell and Price fails to disclose or suggest the claimed features of the invention. Claims 1 and 7 further recite carrying out Monte Carlo simulation based on the calculated order occurrence probability distributions to determine occurrence rate probability distributions of number of orders during a predetermined period. Claims 12 and 18 further recite Monte Carlo simulation means for carrying out Monte Carlo simulation based on the calculated order occurrence probability distributions to determine occurrence rate probability distributions of number of orders during a predetermined period.

The Office Action acknowledged that McConnell does not disclose a Monte Carlo simulation. Price was cited for curing this deficiency. In contrast, Price discloses a

study using Monte Carlo simulation to compare two methods of forecasting for very low demand items. There is no disclosure or suggestion in Price that the Monte Carlo simulation determines occurrence rate probability distributions of number of orders during a predetermined period. As such, Price fails to cure the deficiencies in McConnell. Accordingly, the combination of McConnell and Price fails to disclose or suggest the features of the invention as recited in claims 1, 7, 12 and 18.

Under U.S. patent practice, the PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002). The Office Action restates the advantages of the present invention to justify the combination of references. There is, however, nothing in the applied references to evidence the desirability of these advantages in the disclosed structure.

In view of the above, the Applicants respectfully submit that the Office Action has failed to establish a *prima facie* case of obviousness for purposes of a rejection of claims 1, 7, 12 and 18 under 35 U.S.C. §103.

**Conclusion**

The Applicants respectfully submit that claims 1, 7, 12 and 18 are allowable. Claims 2, 5, 6 and 10 depend from claim 1; claims 8, 9 and 11 depend from claim 7; claims 13, 16, 17 and 21 depend from claim 12; and claims 19, 20 and 22 depend from claim 18. The Applicants respectfully submit that these dependent claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons. Accordingly, the Applicants respectfully request withdrawal of the rejections, allowance of claim claims 1, 2, 5-13 and 16-22, and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper,

may be charged to counsel's Deposit Account No. 01-2300, referencing Attorney Dkt. No. 107101-00036.

Respectfully submitted,



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